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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/872,725	06/01/2001	Frederic Dufaux	15311-2305	4232

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EXAMINER

SAFAIPOUR, HOUSHANG

ART UNIT PAPER NUMBER

2622

DATE MAILED: 07/21/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/872,725	Applicant(s) DUFAUX ET AL.	
	Examiner Houshang Safaipoor	Art Unit 2622	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 March 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3,5-16,18-21 and 23-36 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 25-36 is/are allowed.
- 6) ☒ Claim(s) 1-3,5,15,16,18-21,23 and 24 is/are rejected.
- 7) ☐ Claim(s) 6-14 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>6/22/01</u> . | 6) <input type="checkbox"/> Other: _____ |

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DETAILED ACTION

Response to Arguments

Applicant's amendment filed on March 7, 2005 has been entered and made of record.

Applicant's arguments have been considered, but are moot in view of the new grounds of rejection.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Altunbasak et al. (U.S. Patent No. 6,597,816) and further in view of Printed Publication (Mosaic Based Representations of Video Sequences and Their Applications) by Irani et al. (IEEE 0-8186-7042-8/95). This publication is cited by the applicant.

Regarding claim 1, Altunbasak et al. discloses a method for generating an electronic version of a document, the method comprising the steps of: receiving a plurality of digital, electronic images of the document; generating a corrected image from each received image; deriving one or more motion parameters for each pair of consecutive, corrected images, the motion parameters indicating the relative motion between the consecutive, corrected images; aligning each image relative to the previous images based on the derived motion parameters; and blending each image into the previous images so as to produce the electronic version of the

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document (col. 1 line 59 through col. 2, line 50). Altunbasak does not explicitly disclose derivation of the motion parameters by minimizing the sum of squares differences between each pair of consecutive images. Irani et al. discloses such a method as indicated on page 607, right hand column, paragraphs 3 and 4 under section 3.1 (Image Alignment). Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to use Irani's method in Altunbasak's invention for proper alignment of the images.

Regarding claim 2, Altunbasak et al. discloses the method of claim 1 wherein the digital, electronic images are produced by a digital video camera (col. 2, lines 46-50).

Regarding claim 3, Altunbasak et al. discloses the method of claim 1 wherein two or more series of digital, electronic images of the document are received, whereby each series of images corresponds to a respective sweep of the document by the video camera, the method further comprising the steps of: merging the images from each series together to form a composite, mosaic image of the respective sweeps, and merging consecutive mosaic sweep images together to form the electronic version of the document (col. 1 line 59 through col. 2, line 50).

Claims 1-3, 5, 15, 16, 18-21, 23 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kumar et al. (U.S. Patent No. 6,173,087) and further in view of Printed Publication (Mosaic Based Representations of Video Sequences and Their Applications) by Irani et al. (IEEE 0-8186-7042-8/95).

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Regarding claim 1, Kumar et al. discloses a method for generating an electronic version of a document, the method comprising the steps of: receiving a plurality of digital, electronic images of the document; generating a corrected image from each received image; deriving one or more motion parameters for each pair of consecutive, corrected images, the motion parameters indicating the relative motion between the consecutive, corrected images; aligning each image relative to the previous images based on the derived motion parameters; and blending each image into the previous images so as to produce the electronic version of the document (col. 1, lines 21-52 and col. 11, line 19-56). Kumar et al. does not explicitly disclose derivation of the motion parameters by minimizing the sum of squares differences between each pair of consecutive images. Irani et al. discloses such a method as indicated on page 607, right hand column, paragraphs 3 and 4 under section 3.1 (Image Alignment). Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to use Irani's method in Kumar's invention for proper alignment of the images.

Regarding claim 2, Kumar et al. discloses the method of claim 1 wherein the digital, electronic images are produced by a digital video camera (col. 11, lines 51-56).

Regarding claim 3, Kumar et al. discloses the method of claim 1 wherein two or more series of digital, electronic images of the document are received, whereby each series of images corresponds to a respective sweep of the document by the video camera, the method further comprising the steps of: merging the images from each series together to form a composite, mosaic image of the respective sweeps, and merging consecutive mosaic sweep images together to form the electronic version of the document (col. 1, lines 21-52 and col. 11, line 19-56).

Regarding claim 4: canceled

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Regarding claim 5, Kumar et al. discloses the method of claim 4 wherein in the corrected image frames include a plurality of pixels, and the sum of squares differences is applied on a pixel-by-pixel basis (col. 4, line 64 through col. 5 line 30).

Regarding claims 15 and 16, the arguments analogous to those presented for claims 1, and 2 are applicable to claims 15 and 16 respectively.

Regarding claim 17: canceled

Regarding claim 18, Kumar et al. discloses the system of claim 17 further comprising at least one look-up table containing, for each pixel of the received images, a corresponding entry containing a correction factor, and wherein the image correction engine utilizes the correction factors stored at the at least one look-up table to produce the corrected images (col. 10, lines 24-67).

Regarding claim 19, Kumar et al. discloses the system of claim 18 wherein the digital video camera is mounted to a stand, and the correction factors stored at the at least one LUT correct for off-axis illumination and radial lens distortion of the video camera, and for tilt of the video camera relative to the stand (col. 9, line 26 through col. 10 line 67).

Regarding claim 20, Kumar et al. discloses the system of claim 19 wherein the at least one motion estimation engine includes an image pyramid having a plurality of levels, each level of the image pyramid configured to perform an iterative gradient descent operation and a convergence operation on consecutive images to produce the one or more motion parameters, the motion parameters from a given level being used as a starting point for the iterative gradient descent and convergence operations of the next lower level of the pyramid (col. 5 line 21-30)

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Regarding claims 21, 23 and 24, the arguments analogous to those presented for claims 1, 18 and 20 are applicable to claims 21 and 23.

Regarding claim 22: canceled

Allowable Subject Matter

Claim 25 is allowed. Claims 26-36 are, directly or indirectly, dependent on claim 25 and, therefore, are allowed.

Claims 6-14 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

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Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Houshang Safaipoor whose telephone number is (571)272-7412. The examiner can normally be reached on Mon.-Thurs. from 6:30am to 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward L. Coles, Sr. can be reached on (571)272-7402. The fax phone number for the organization where this application or proceeding is assigned is (571)273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Houshang Safaipoor
Patent Examiner
Art Unit 2622
June 21, 2005


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